

121,837

PATENT



SPECIFICATION

Application Date, Jan. 18, 1918. No. 1051/18,

Complete Left, July 17, 1918.

Complete Accepted, Jan. 9, 1919.

PROVISIONAL SPECIFICATION.

Improvements in Spectacles, Goggles, or the like and the Method of Manufacture of the Lenses or Glasses therefor.

I, WALTER ANDERSON DIXEY, of 49, Holland Park Avenue, Kensington, in the County of London, Optician, do hereby declare the nature of this invention to be as follows:—

The object of this invention is to improve the manufacture of spectacles, goggles and the like in which it is desired that the lenses or glasses, hereinafter in this specification termed lenses, shall be tinted or coloured for a portion of their surface, while another portion shall be clear or transparent or nearly so.

Such spectacles, goggles or the like, constructed with such lenses and as hereafter described are particularly advantageous for use by aviators or observers in aircraft for shielding the eyes from the sun's rays, while enabling instruments on the machine to be easily inspected through the clear part of the lens, or enabling objects on the earth to be readily and accurately seen. Such goggles or the like have also many useful applications in the arts, as for instance they may be used in operations connected with furnaces.

According to this invention spectacles, goggles or the like are provided with lenses in which there is produced a tint, shade or colour, which is graduated in regularly varying depth from the top to the bottom or *vice versa* or from one side to the other, in such manner that while one part of the lens is tinted so as to shelter the eyes from excess of light in one direction, another part of the same lens is free from tint, or is transparent and can be used for accurate observation.

Such spectacles or goggles when to be used by pilots or observers in aircraft are advantageously provided with lenses in which the tint is deep at the upper parts and at or towards the lower part the tinted effect merges into the transparent.

The lenses or glasses described are constructed according to the invention by taking two pieces of glass; one clear or transparent and the other tinted as desired and their plane surfaces are then joined together face to face as by cement, or in any other known manner; I propose to unite the faces together by fusion, a process of joining together pieces of glass which is already known and practised.

The tinted and clear glass so joined is then ground or otherwise shaped, by cutting away parts of the structure, so that there remains a compound plate composed of two prisms of equal or similar prismatic power, one such prism being composed of tinted glass and the other of clear or transparent glass.

[Price 6d.]



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The prisms are joined together base to apex with the base-apex lines coincident, and when polished there is thus produced a lens in which the tint is graduated as aforesaid.

Although it is proposed to generally make the exterior surfaces of the lens or glass parallel to each other the invention is not limited thereto since the surfaces may be curved.

It will now be understood that the lens constructed as described presents two thin prisms, one tinted and the other transparent, of equal or similar prismatic power, joined or united together base to apex, with the base-apex lines co-incident, thereby producing a lens having the characteristics hereinbefore outlined.

Dated this 18th day of January, 1918.

BREWER & SON,
33, Chancery Lane, London,
Patent Agents for the Applicant. 15

COMPLETE SPECIFICATION.

Improvements in Spectacles, Goggles, or the like and the Method of Manufacture of the Lenses or Glasses therefor.

I, WALTER ANDERSON DIXEY, of 49, Holland Park Avenue, Kensington, in the County of London, Optician, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The object of this invention is to improve the manufacture of spectacles, goggles and the like in which the lenses or glasses, hereinafter in this specification termed lenses, are to be tinted or coloured for a portion of their surface, while another portion shall be clear or transparent or nearly so.

According to this invention spectacles, goggles and the like are provided with lenses or glasses each composed of two prisms of glass, one tinted and the other clear or transparent, of equal prismatic power, joined or united together base to apex with the base-apex lines coincident in such manner that a compound lens is produced having a tint, shade or colour which is graduated in regularly varying depth from the top to the bottom, or *vice versa*.

Spectacles, goggles or the like constructed with such lenses are particularly advantageous for use by aviators or observers in aircraft for shielding the eyes from the sun's rays, while enabling instruments on the machine to be easily inspected through the clear part of the lens, or enabling objects on the earth to be readily and accurately seen, and as aforesaid, such lenses in which the tint is deep at the upper parts and in which the tinted effect towards the lower parts merges into the transparent, are particularly useful for pilots or observers in aircraft, while at the same time are also useful for other purposes, as for instance they may be used in operations connected with furnaces.

It has heretofore been proposed to form lenses of separate layers of glass of different kind, index, or colour, by uniting and shaping such layers while in a molten state to give their united surfaces plane, spherical or cylindrical curves as desired.

It has also been proposed to form spectacles, goggles or eye protectors, possessing a clear colourless portion and a tinted portion, by staining and burning in to produce the tinted portion, or by stained portions of glass being laid over a clear glass and connected thereto.

The invention will be readily understood by further describing the same

with reference to the accompanying drawings, whereon Fig. 1 shows a pair of spectacles fitted with lenses according to this invention, in which lenses a tint, shade or colour 1 is graduated regularly in depth, varying from the top to the bottom in such manner that while the upper part of the lens is tinted so as to shelter the eyes from excess of light, another part 2 of the same lens is free from tint, or nearly so, and can be used for accurate observation.

Fig. 2 shows in transverse section a lens in a preliminary stage of manufacture, and Fig. 3 shows the lens partly completed.

Referring to Fig. 2, two pieces of glass 1, 2 (that marked 1 being tinted and that marked 2 being clear or transparent) are placed together with their plane surfaces in contact and are so jointed; I propose to unite the contacting faces of the pieces of glass 1 and 2 together by fusion, a process of joining together pieces of glass which is already known and practised.

The tinted glass 1 and clear glass 2 so joined are then ground or otherwise shaped, by cutting away parts of the structure, so that there remains a compound plate as shown at Fig. 3, composed of two prisms 1 and 2 of equal or prismatic power, one such prism 1 as aforesaid consequently being composed of tinted glass, and the other prism 2 of clear or transparent glass. The prisms are joined together base to apex, with the base-apex lines coincident, and when polished there is thus produced a lens in which the tint is graduated as described with reference to Fig. 1.

Obviously the lens is given a suitable form at its peripheral edge by any of the usual means of manufacture.

In some cases, as shown by a transverse section of such a lens at Fig. 4, the compound lens may be given a concave form, or as shown at Fig. 5 by a similar view, the compound lens may be given a convex form if so desired.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Lenses or glasses for spectacles, goggles or the like; composed of two prisms, one tinted and the other clear or transparent, of equal or similar prismatic power, joined or united together base to apex with the base-apex lines coincident in such manner that a compound lens is produced having a tint, shade or colour which is graduated in regularly varying depth from the top to the bottom, or *vice versa*.

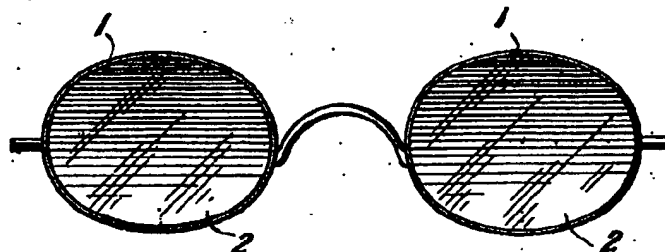
2. In lenses or glasses as claimed by Claim 1; the method of manufacture consisting in connecting together the plane surfaces of two pieces of glass by cement, fusion or by other known means, one of such pieces being clear or transparent and the other tinted, and subsequently grinding or otherwise shaping the tinted and clear glass so joined as to leave a compound plate composed of a tinted prism and a clear prism, the exterior surfaces of the lenses or glasses so produced being parallel to each other or curved, substantially as described.

3. Spectacles, goggles or the like fitted with lenses or glasses, constructed substantially as and for the purposes described with reference to the accompanying drawings.

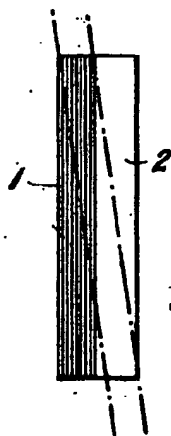
Dated this 17th day of July, 1918.

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— *Fig. 1.* —



— *Fig. 2.* —



— *Fig. 3.* —



— *Fig. 4.* —



— *Fig. 5.* —



[This Drawing is a reproduction of the Original on a reduced scale.]

M. J. & S. Co., Photo-Litho.